

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup>:</b> C12N 15/00, 5/10, A01K 67/027, G01N 33/50, 33/68 // C12N 15/33, C07K 14/025, C12N 15/12, C07K 14/475, 14/495	<b>A1</b>	<b>(11) International Publication Number:</b> WO 97/39117 <b>(43) International Publication Date:</b> 23 October 1997 (23.10.97)
<b>(21) International Application Number:</b> PCT/GB97/01063 <b>(22) International Filing Date:</b> 17 April 1997 (17.04.97) <b>(30) Priority Data:</b> 9607953.8 17 April 1996 (17.04.96) GB <b>(71) Applicant (for all designated States except US):</b> THE UNIVERSITY OF LIVERPOOL [GB/GB]; Senate House, Abercromby Square, Liverpool L69 3BX (GB). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> RUDLAND, Philip, Spencer [GB/GB]; Dept. of Biological Sciences, The University of Liverpool, Liverpool L69 3BX (GB). BAR-RACLOUGH, Barry, Roger [GB/GB]; Dept. of Biological Sciences, The University of Liverpool, Liverpool L69 3BX (GB). KILTY, Iain, Charles [GB/GB]; Dept. of Biological Sciences, The University of Liverpool, Liverpool L69 3BX (GB). DAVIES, Barry, Robert [GB/GB]; Addenbrooks Hospital, P.O. Box 238, Cambridge CB2 2QQ (GB). SCHMIDT, Guenter [DE/GB]; 13 Station Road, Cambridge CB1 2JB (GB).	<b>(74) Agent:</b> W.P. THOMPSON & CO.; Coopers Building, Church Street, Liverpool L1 3AB (GB).  <b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> With international search report.	
<b>(54) Title:</b> CONDITIONALLY IMMORTALISED CELL LINES DERIVED FROM TRANSGENIC ANIMALS  <b>(57) Abstract</b>  The invention relates to mammalian cell lines and transgenic mammals. More particularly, it relates to a method for producing a rat cell line, a method for producing a transgenic rat, a transgenic rat, a rat cell line, cells and tissue obtained therefrom and uses therefore. The cell line derived from a transgenic mammal comprises: (i) a conditional oncogene, transforming gene or immortalising gene or a cell cycle affecting gene; and (ii) a cell type specific promoter. They include a neuronal cell line in which the cell type specific promoter is an NF-L gene promoter, and a mammary cell line in which the cell type specific promoter is a MMTV gene promoter. The conditional oncogene, transforming gene or immortalising gene is preferably a SV40tsA58 gene.		

jc135 U.S. PTO  
09/173821  
10/16/98

## INTERNATIONAL SEARCH REPORT

onal Application No

PCT/GB 97/01063

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/00 C12N5/10 A01K67/027 G01N33/50 G01N33/68  
//C12N15/33, C07K14/025, C12N15/12, C07K14/475, C07K14/495,

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C12N A01K G01N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 91 13150 A (LUDWIG INST CANCER RES ;MEDICAL RES COUNCIL (GB)) 5 September 1991	1-3,5,6, 10-17, 21-24
Y	see abstract	4,8,9, 19,20
	see page 1, line 1-13 see page 2, line 21 - page 3, line 9 see page 9, line 4-8 see page 12, line 1 - page 14, line 8 see page 15, line 14 - page 19, line 28 see page 22, line 28 - page 26, line 21 see page 29, line 1-6 see page 29, line 26 - page 30, line 10 see page 31, line 24 - page 34, line 20 see page 38, line 25 - page 40, line 10 --- -/--	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

4 August 1997

Date of mailing of the international search report

08.08.97

Name and mailing address of the ISA

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Macchia, G

# INTERNATIONAL SEARCH REPORT

Pat. Application No  
PCT/GB 97/01063

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CELL, vol. 54, 1 September 1988, pages 105-115, XP002034399 MULLER ET AL.: "Single-step induction of mammary adenocarcinoma in transgenic mice bearing the activated c-neu oncogene" see page 105 ---	1-3,5,7, 18
X	EP 0 169 672 A (HARVARD COLLEGE) 29 January 1986	1,2
Y	see page 5, line 18-19	19,20
A	see page 6, line 1 - page 7, line 11 see page 17, line 7 - page 18, line 11 see page 19 - page 21; claims ---	3,7,18
Y	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 192, no. 2, 30 April 1993, pages 465-470, XP002034398 REEBEN ET AL.: "Tissue-specific expression of rat light neurofilament promoter-driven reporter gene in transgenic mice" see abstract see page 467; figure 2 see page 470, line 6-8 ---	4,8,9
A	PROC. NATL. ACAD. SCI. USA, vol. 82, September 1985, pages 5880-5884, XP002034400 ROSS AND SOLTER: "Glucocorticoid regulation of mouse mammary tumor virus sequences in transgenic mice" cited in the application see page 5880, left-hand column see page 5883, right-hand column - page 5884 ---	5,10
A	IN VIVO, vol. 8, no. 3, 1994, pages 263-270, XP002034877 MIZUNO M. ET AL.: "Normal and neoplastic mammary gland growth in MMTV-TGF alpha transgenic mice" see abstract ---	7,18
A	DATABASE WPI Section Ch, Week 9145 Derwent Publications Ltd., London, GB; Class B04, AN 91-329070 XP002034463 & JP 03 219 821 A (SNOW BRAND MILK PROD CO LTD) , 27 September 1991 see abstract ---	12
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# INTERNATIONAL SEARCH REPORT

Patent Application No  
PCT/GB 97/01063

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 95 11308 A (AMGEN INC) 27 April 1995 see page 33, line 22-28 ---	13-16
A	WO 92 10563 A (UNIV PARIS VII) 25 June 1992 ---	
A	WO 89 09816 A (MASSACHUSETTS INST TECHNOLOGY) 19 October 1989 -----	

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 97/ 01063

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
Remark: Although claim(s) 13-16  
is(are) directed to a method of treatment of the human/animal  
body, the search has been carried out and based on the alleged  
effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such  
an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all  
searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment  
of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report  
covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is  
restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 97/01063

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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